

WHAT IS CLAIMED IS:

1. An electro-optical device, comprising:
an electro-optical substance sandwiched by a first substrate and a second substrate;
5 a sealing material disposed between the first substrate and the second substrate that bonds the first substrate and the second substrate to each other at a sealing region along peripheries of the first substrate and the second substrate;
a plurality of pixel electrodes disposed on the first substrate in an image display region that is enclosed by the sealing region;
10 wires provided on the first substrate that extend from an inside of the image display region to a position that is outside of the sealing region;
a vertically conducting pad disposed in the sealing region; and
an opposing electrode provided on the second substrate that opposes the pixel electrodes, the opposing electrode including a vertical conductor section that
15 opposes the vertically conducting pad,
wherein at least one part of the sealing material, which is disposed between the vertically conducting pad and the vertical conductor section, includes an electrically conductive material.
2. The electro-optical device according to Claim 1, wherein the vertically
20 conducting pad occupies at least one of three given sides of the sealing region.
3. The electro-optical device according to Claim 2, wherein the vertically conducting pad is formed at at least one of the four sides of the sealing region at which an inlet for the electro-optical substance is not formed.
4. The electro-optical device according to Claim 1, wherein the sealing
25 material further includes a gap-forming member mixed therein for controlling a gap between the first substrate and the second substrate.
5. The electro-optical device according to Claim 4, wherein the gap-forming member further includes electrically conductive particles at least in a portion of the sealing material disposed between the vertically conducting pad and the vertical
30 conductor section.
6. The electro-optical device according to Claim 5, wherein the electrically conductive particles are one of at least metal-plated, bead-like and fiber-like particles.

7. The electro-optical device according to Claim 1, wherein at least one part of the sealing material, that is disposed between the vertically conducting pad and the vertical conductor section, further includes a powdered metal mixed in the sealing material.

5 8. The electro-optical device according to Claim 1, wherein the sealing material further includes the electrically conductive material in the entire sealing region.

9. The electro-optical device according to Claim 1, wherein the sealing material further includes the electrically conductive material at least in a portion of the sealing region opposing the vertically conducting pad and includes an electrically insulative material in a portion of the sealing region not opposing the vertically conducting pad.

10. The electro-optical device according to Claim 1, wherein a surface of the vertically conducting pad formed in the sealing region is disposed on a same plane as that of a surface of an insulation film formed in the sealing region.

11. The electro-optical device according to Claim 1, wherein a surface of the vertically conducting pad formed in the sealing region is disposed at a level differing from the level of a surface of an insulation film formed in the sealing region, and the sealing material includes gap-forming members having diameters differing from each other in accordance with the size of a gap between the first substrate and the second substrate, the size of the gap varying between a portion of the sealing region in which the vertically conducting pad is formed and another portion of the sealing region in which the insulation film is formed so as to control the gap between the first substrate and the second substrate.

12. The electro-optical device according to Claim 11, wherein the sealing material including the gap-forming member having a smaller diameter corresponding to the gap of a smaller size is disposed in a part of the sealing region associated with the gap of a larger size and adjacent to a boundary, at which the size of the gap varies, between the portion of the sealing region in which the vertically conducting pad is formed and the other portion of the sealing region in which the insulation film is formed.

13. The electro-optical device according to Claim 1, wherein the sealing material further includes at least one of a thermosetting resin and a thermo-photo-curing resin.

14. A method for manufacturing an electro-optical device, by which the electro-optical device according to Claim 1 is manufactured, the method comprising the steps of:

5 forming the pixel electrodes, the wires, and the vertically conducting pad on the first substrate;
forming the opposing electrode on the second substrate; and
bonding the first substrate and the second substrate to each other with the sealing material.

15 15. The method for manufacturing an electro-optical device according to Claim 14, further comprising the step of:

planarizing the vertically conducting pad.

16. The method for manufacturing an electro-optical device according to Claim 14, wherein the step of bonding with the sealing material comprises the steps of:

15 applying the sealing material including a gap-forming member having a first diameter to a portion of the sealing region opposing the vertically conducting pad by using a dispenser; and

20 applying the sealing material including another gap-forming member having a second diameter to another portion of the sealing region not opposing the vertically conducting pad by using another dispenser, the second diameter differing from the first diameter.

17. The method for manufacturing an electro-optical device according to Claim 14, wherein the step of bonding with the sealing material comprises the steps of:

25 applying the sealing material including an electrically conductive gap-forming member to a portion of the sealing region opposing the vertically conducting pad by using a dispenser; and

30 applying the sealing material including an electrically insulative gap-forming member to another portion of the sealing region not opposing the vertically conducting pad by using another dispenser.

18. The method for manufacturing an electro-optical device, according to Claim 14, wherein the step of bonding with the sealing material comprises the step of heating the sealing material including at least one of a thermosetting resin and a thermo-photo-curing resin.

19. A projection display apparatus, comprising:
a light source;
a light valve comprising the electro-optical device according to

Claim 1;

- 5 a light-guide member for guiding light generated by the light source to
the light valve; and
a projection optical element for projecting the light modulated by the
light valve.